

10/518,835
Response to Office Action of November 30, 2005
Via facsimile 571-273-8300
Date of Deposit: February 28, 2006

Attorney Docket Number DE 020160

Remarks

Claims 1-7 are pending in the application. Claim 6 was previously amended in Applicants' preliminary amendment co-filed with the present application. The specification has been amended in the Abstract. Support for the amendment is found in the abstract of PCT/IB2003/002765, of which the present application claims the benefit, and which was transmitted to the U.S. Patent and Trademark Office by the International Bureau. No new matter has been added, and no new material presented that would necessitate an additional search on the part of the Examiner.

Prior to analyzing the art cited in the Office Action, Applicants believe that a brief description of the subject matter of independent claims 1 and 7 would be of use to the Examiner.

Claim 1 is directed to an electroluminescent device that includes a substrate, a porous layer that borders on the substrate, and a laminated body that borders on the porous layer. The laminated body includes at least a first electrode, an electroluminescent layer and a second electrode. A colored material is at least partially present in the pores of the porous layer.

Claim 7 is directed to a method of manufacturing an electroluminescent device that includes a substrate, a porous layer that borders on the substrate, and a laminated body that borders on the porous layer. The laminated body includes at least a first electrode, an electroluminescent layer and a second electrode. A colored material is at least partially present in the pores of the porous layer. The colored material is introduced into the porous layer by means of ink jet printing.

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Issues under 35 U.S.C. §102(e)

The Office Action on page 3, ¶1 rejects claims 1-3 and 6-7 as being anticipated by Yamazaki et al. (U.S. patent number 6,641,933, issued November 4, 2003).

The legal standard for rejection of a claim under 35 U.S.C. §102 is identity.

Applicants show below that the subject matter in the cited reference is not the same as that of pending claims 1 and 7.

Yamazaki et al. shows a light-emitting organic compound that is capable of providing electroluminescence, and an electroluminescent display device utilizing a light-emitting organic compound. See Yamazaki et al., column 1, lines 1-4.

Yamazaki et al. shows pixels formed directly on a substrate. See Yamazaki et al., column 4, lines 60-62 and FIG. 1. Two thin-film transistors (TFT) and a pixel electrode are electrically connected to make up each pixel. Ibid, column 4, line 67; column 5, lines 1-5. A compound, which is referred to in Yamazaki et al. as cathode layer, is formed over all of the pixel electrodes. Ibid, column 5, lines 11-14 and FIG. 1. An electroluminescent layer is formed over the cathode layer. Ibid, column 5, lines 35-37 and FIG. 1. Transparent conductive film acting as an anode is then formed over the electroluminescent layer. Ibid, column 6, lines 61-62 and FIG. 1. An insulating film acting as a passivation film is formed over the anode. Ibid, column 6, lines 66-67 and FIG. 1. The steps up to this point form the active matrix substrate. Ibid, column 7, lines 3-9. An opposing substrate is attached to the active matrix substrate, so that the electroluminescent devices are located in between the two substrate layers. Ibid, column 7, lines 10-12.

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The invention of the present claims is not the same as the cited art

The Office Action on page 3 alleges that Yamazaki's layer 113 in FIG. 1 of this reference is the same as the presently claimed porous layer. In contrast to the present claims, Yamazaki et al. shows color filters and light shielding films deposited on an opposing substrate, but does not show a porous layer. See Yamazaki et al., layers 112 and 113, FIG. 1.

The Office Action further cites column 7, line 66 - column 8, line 3 of Yamazaki et al., however, this reference simply does not show a porous layer.

In contrast to Yamazaki et al., the present claims are directed to an electroluminescent device where a porous layer is deposited on a substrate, bordered by a first electrode or anode layer, bordered by an electroluminescent layer, bordered by a second electrode or cathode layer. This differs from the light-emitting electroluminescence display device of Yamazaki et al., in which pixels are formed firstly and directly on a substrate, then a compound serving as the cathode layer is formed over the pixel electrodes, followed by an electroluminescent layer, followed by a transparent conducting film serving as an anode layer.

Yamazaki et al. fails to show a porous layer, let alone a colored material in the pores of the porous layer.

This factual analysis shows that the subject matter of claims 1 and 7 is not the same as Yamazaki et al., therefore these claims are not anticipated by this reference. As claims 2-3 and 6 depend directly or indirectly from claim 1, therefore these claims also are not anticipated by the cited reference. Therefore the present claims are novel with respect to the cited art.

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Applicants respectfully request that rejection of claims 1-3 and 6-7 under 35 U.S.C. §102(e) be withdrawn.

Issues under 35 U.S.C. §103(a)

The Office Action on page 4, ¶3 rejects claims 4 and 5 under 35 U.S.C. §103(a) in view of Yamazaki et al. (U.S. patent number 6,641,933, issued November 4, 2003) in combination with Codama et al. (U.S. patent number 6,121,726, issued September 19, 2000).

Yamazaki et al. is characterized above. Further, the Office Action on page 4 admits that Yamazaki et al. fails to teach or suggest that segments of the porous layer have different shapes. Applicants assert that Yamazaki et al. fails to teach or suggest any porous layer. For these reasons, Yamazaki et al. alone fails to teach or suggest the device or method of claims 1 and 7.

Codama et al. shows a display that comprises an organic electroluminescent (EL) light-emitting device for emitting bluish green light, a blue transmitting layer, a green transmitting layer, a fluorescence converting layer for absorbing bluish green light and emitting orange light, and a red transmitting layer. See Codama et al., column 2, lines 46-50. Codama et al. also shows that the organic EL light-emitting device is formed to enclose the fluorescence converting layer, and that a cathode of the device is extended down along the sides of the fluorescence converting layer. Ibid, column 2, lines 4-8. Further, Codama et al. shows that the surface of the fluorescence converting layer is convex toward the organic electroluminescent light emitting device. Ibid, column 2, lines 17-19.

Codama et al. fails to cure the defects of Yamazaki et al., because Codama et al. fails

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to teach or suggest any porous layer, let alone having colored material present within the pores of a porous layer. Rather, Codama et al. describes the use of a fluorescence converting layer and several colored transmitting layers. See Codama et al., column 1, lines 66-67; column 2, lines 1-3.

Further, Codama et al. fails to teach, or suggest Applicants' claimed electroluminescent device formed by depositing a porous layer on a substrate, bordered by a first electrode or anode layer, bordered by an electroluminescent layer, bordered by a second electrode or cathode layer. Rather, Codama et al. forms an electroluminescent device by enclosing a fluorescence converting layer and extending a cathode along the sides of the fluorescence converting layer, so that the surface of the converting layer is convex toward an organic EL light-emitting device. Ibid, column 2, lines 14-19.

Claims 4 and 5 depend directly or indirectly from claim 1 and therefore incorporate all of the subject matter of this claim and contain additional subject matter. The factual analysis here shows that claim 1 is not obvious in view of the combination of Yamazaki et al. and Codama et al. As Codama et al. fails to cure the defects of Yamazaki et al. with respect to claim 1, therefore claims 4 and 5 are not obvious in view of the combination of Yamazaki et al. and Codama et al.

For these reasons, Applicants assert that the present claims comply with 35 U.S.C. §103(a), and respectfully request that rejection of claims 4 and 5 under 35 U.S.C. §103(a) be withdrawn.

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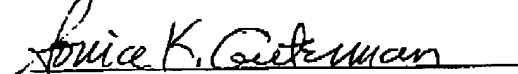
Summary

On the basis of the foregoing reasons, Applicants respectfully submit that the pending claims are in condition for allowance, which is respectfully requested.

If there are any questions regarding these remarks, the Examiners are invited and encouraged to contact Applicants' representative at the telephone number provided.

Respectfully submitted,

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